

WHAT IS CLAIMED IS:

1. A method for manufacturing a gallium nitride-based semiconductor light emitting device, comprising the steps of:

5 sequentially forming, over a substrate, a first conductivity type clad layer, an active layer, and a second conductivity type clad layer;

forming a transparent electrode over the second conductivity type clad layer;

10 forming a photoresist film on the transparent electrode such that the transparent electrode is exposed at a predetermined region corresponding to one lateral end portion thereof;

15 removing respective portions of the transparent electrode, second conductivity type clad layer, and active layer corresponding to the predetermined region, thereby partially exposing the first conductivity type clad layer;

removing the photoresist film; and

20 forming first and second bonding electrodes on predetermined portions of the transparent electrode and second conductivity type clad layer, respectively.

2. The method according to claim 1, wherein the step of partially exposing the first conductivity type clad layer

comprises the steps of:

wet etching the transparent electrode at its portion corresponding to the predetermined region; and

dry etching the first conductivity type clad layer and  
5 active layer at their portions corresponding to the predetermined region, respectively.

3. The method according to claim 2, wherein the step of wet etching the transparent electrode comprises the step of  
10 over-etching the transparent electrode such that the transparent electrode is undercut beneath the photoresist film by a predetermined width.

4. The method according to claim 3, wherein the  
15 predetermined undercut width of the transparent electrode corresponds to at least  $3\mu\text{m}$ .

5. The method according to claim 1, wherein the step of forming the first and second bonding electrodes comprises the  
20 steps of:

forming a passivation layer over a light emitting structure obtained after completion of the formation of the transparent electrode;

forming a photoresist film on the passivation layer such

that the passivation layer is exposed at regions where the first and second bonding electrodes are to be formed, respectively;

etching portions of the passivation layer respectively corresponding to the electrode forming regions, thereby removing  
5 the passivation layer portions;

forming the first and second bonding electrodes on the electrode forming regions from which the passivation layer has been removed, respectively; and

removing the photoresist film used to form the first and  
10 second bonding electrodes.

6. A method for manufacturing a gallium nitride-based semiconductor light emitting device, comprising the steps of:

forming a light emitting structure including a substrate,  
15 a first conductivity type clad layer formed over the substrate, and an active layer, a second conductivity type clad layer and a transparent electrode sequentially formed on the first conductivity type clad layer at a region corresponding to one lateral portion of the first conductivity type clad layer;

20 forming a passivation layer over the light emitting structure;

forming a photoresist film on the passivation layer such that the passivation layer is exposed at predetermined regions where first and second bonding electrodes are to be formed,

respectively;

etching portions of the passivation layer exposed at the predetermined electrode forming regions, thereby removing the exposed passivation layer portions;

5       forming the first and second bonding electrodes at the predetermined electrode forming regions from which the passivation layer has been removed; and  
removing the photoresist film.

10       7. The method according to claim 6, wherein the first and second bonding electrodes are made of a material selected from a group consisting of Ti/Al, Cr/Au, Cr/Ni/Au, Cr/Pt/Au, and Ti/Al/Ni/Au.

15       8. A method for manufacturing a gallium nitride-based semiconductor light emitting device, comprising the steps of:

sequentially forming, over a substrate, a first conductivity type clad layer, an active layer, and a second conductivity type clad layer;

20       forming a transparent electrode over the second conductivity type clad layer;

forming a photoresist film on the transparent electrode such that the transparent electrode is exposed at a predetermined region corresponding to one lateral end portion

thereof;

etching respective portions of the transparent electrode,  
second conductivity type clad layer, and active layer  
corresponding to the predetermined region, thereby partially  
5 exposing the first conductivity type clad layer;

forming a passivation layer over a light emitting  
structure obtained after completion of the etching step adapted  
to partially expose the first conductivity type clad layer;

forming a photoresist film on the passivation layer such  
10 that the passivation layer is exposed at predetermined regions  
where first and second bonding electrodes are to be formed,  
respectively;

etching portions of the passivation layer exposed at the  
predetermined electrode forming regions, thereby removing the  
15 exposed passivation layer portions;

forming the first and second bonding electrodes at the  
predetermined electrode forming regions from which the  
passivation layer has been removed; and

removing the photoresist film.

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